ASSIGNMENT 2: CRITICAL ANALYSIS ESSAY

Liam Moodley – 2542976 – WSOA3029A

Data Journalism Project: 24 hours in an invisible epidemic

Introduction

In September 2023, journalist Alvin Chang wrote a data-driven narrative named “24 hours in an invisible epidemic” which was published on the digital publication, The Pudding, who specialises in creating visual essays using data to convey their stories. The aim of this story by Chang was to explore 24 hours of a typical weekend day in 2021 using data from American Time Use Survey. The survey has people track their time and how they use it day in and day out.

This data has been collected over a 20-year period from 2003 – 2023 and is used in this instance to help explore how isolation isn’t a unique, in fact its far more common over the last few decades and has been supercharged in the 21st century by focusing on specific people as a baseline and provides data visualisations as aids to drive the message.

In this essay I want to identify and evaluate how data visualisation techniques have been employed in Chang’s work and how appropriate it is in this project. Furthermore, I will explore the UI/UX design principles behind the projects visualisations and how these elements contribute to the narrative and overall user experience.

Outline

To understand if the data visualisations techniques have been used in a way that exemplifies the data, I have to layout the project itself. 24 hours in an invisible epidemic aims to explore how much loneliness can affect someone, it dives into the daily lives of normal people who work a 9 – 5, go grocery shopping, cook dinner and just everyday activities. It considers the amount of time we spend with family and friends during these activities, what’s interesting is that it also explores the fact that when doing these activities you are surrounded by people, however most people will isolate themselves in a bubble and pronounce it as loneliness. Chang notes that “being alone isn’t necessarily the same as being lonely.”

One of the most important parts of this project and was how they collected the data, the American Time Use Survey would regularly ask people of different race, class, gender, social standing a question that digs into two things. The two questions were how they are doing in that specific moment and how much time they have spent with other people that day. This was compiled into a data set and released to the public, from this Chang used it to create three sets of data visualizations: bar graphs, line graphs, and circle diagrams. Each one of these have characteristics which enhance the way the information is conveyed and how the user perceives such a heavy subject and how real it is.

Data Visualization Techniques

Chang's rationale for choosing these visuals to represent his findings makes sense, the data he explores is the following, in the circle diagram it is shown in concentric circles the number of social relationships each person has on average and groups them by levels of intimacy. For me this isn't just a visual to show the different relationships the average person has but it shows how we view our friendship circles and how you may know 500 people and their names but how much do you really know them, it's an important part of friendships classifying them in a hierarchical fashion from your best friend to your co-worker to the friendly fast-food worker. It states in a sub note that we reach a certain cognitive level where we limit the number of stable relationships we have.

In addition to Chang's techniques, a paper written by Bostock et al. (2011) which is foundational for Chang's implementation, emphasizes the power of D3.js in crafting interactive and dynamic data visualizations. By leveraging such tools, projects like "24 Hours in an Invisible Epidemic" enhance user engagement and enable deeper exploration of complex data, effectively conveying nuanced narratives.

While Chang's techniques are more modern a foundation which was built by Bostock et al. (2011). I found myself referencing this a lot as it not only emphasis the power of D3 in creating data visuals which are interactive and dynamic, but it also allows for a deeper understanding of how the exploration of complex data can be effective with the use of these tools.

Building on this a secondary visual used in a line graph which plots points which analyses the trends of the amount of time people spend with their families across different age groups. It's an effective way of showing how the rate has plummeted over the years, especially since the pandemic. I don't think its discussed enough how the pandemic forcing people to be around each other inevitably drove them insane which led to them spending less time together.

I think its important to recognize that this entire project has given access to a lot more than just figures and numbers in a couple data visualizations, it allows you to scope in on each person individually and see how their life is being tracked in all of this. I want to use the bar graphs to cover three things, how interactivity and user engagement is tackled, how UI/UX design principles are applied and how the data is used in tandem with narratives to tell the stories or individuals.

The bar graph which represents the differing amounts of social interaction each person has daily. Chang refers to this as "Cumulative hours of social interaction." It covers 6 hours of a person's day and counts how much of that they spend with friends of family. Its changes and shifts with each person's day with the different activities they did like

eating with family, travelling with a co-worker, sleeping and so much more. As the day goes by, and the actions change the bar goes up and down accumulating to a total of 6 hours however it varies from person to person depending on how much of that time they spent alone.

Interactivity and Data-Driven Storytelling

I find this part of the project so interesting, it gives the website the interactive fill its eluding too, it allows the person to interact with the data profiles introduced earlier, it allows the user to focus on each person and follow their life through these small graphs which represent them. Something to note it that it stays consistent with how it represents them. You are introduced to their lives not personally but on a level which feels familiar, the data means nothing without this being about real people, its human, this really keeps me engaged.

One thing I would like to mention is at some point while trying to keep up with all the information being thrown my way I did get a bit overwhelmed at first , going into this I didn't expect such a heavy reliance on animations and transitions which for me did detract from the sentiment of these people facing real problems with data to back it up and them being portrayed in a cartoonish manner which does pull me out of the project at some points.

UI/UX Design Principles

The stylistic choice of the graph and the project itself draws attention to another aspect of the message being communicated. The site has the user scroll and it tells a story over 24 hours and every scroll is a minute that passes in the story. Not only does it change every minute but the data its showing is also shifting and not in minuscule way. Going back to the bar graph, you notice when a person's time jumps up even just a bit, I feel as if this represents a larger message. Loneliness even just a moment with another person can change your mood and your feelings of loneliness, all it takes is a walk with your friend or jumping into an online game with some randoms.

It can also be said the same for the opposite, the blocks that are empty and have no fill (< 1 hour with other people), stand out. To spend a day alone isn't bad but to do it every day can really take a toll on someone, and you recognise it when you look at those blocks not filling up as you scroll past each hour. For me this is a clear intention UI/UX choice by the developer.

Conclusion

I was sitting in the data visualisation lecture, and the lecturer mentioned how data visualisation is a way to effectively communicate a large amount of data in a nice little gift-wrapped box (not in those words exactly). It fascinated me because for as long as I can remember data had always been black and white. Here's is this information we

gathered, it is about this topic, and yes here's the results, go figure out what It all means. But data visualisation adds another layer to that by saying here is the results but here is how you understand it and why you should take an interest in it, look at how meaningful it is. (Bostock et al., 2011).

In this project it takes three things and combines them into a data visualised story. Peoples time, people's mental health and social relationships are all melted together and stuck on this page for everyone to see, and it is done in a way that conveys complex information effectively. Chang takes on a story that will resonate with a lot of people and carefully balances narrative and data accuracy.

The main thing I believe I can take away from my research and writing this essay on this project is the importance of using interactive elements how it's used to make personalised data more impactful. I believe 24 hours in an invisible epidemic underscores a harsh reality but uses the power of well-designed data visualization and combining it with abstract concepts to make this data have informational clarity while maintaining emotionally engagement with the context of loneliness overarching all of it.

Word Count – 1642

References

Alvian Chang (2023). 24 hours in an invisible epidemic. *Pudding*. Available at: https://pudding.cool/2023/09/invisible-epidemic/ (Accessed: 2 September 2024).

Bostock, M., Ogievetsky, V. and Heer, J. (2011). D3: Data-Driven Documents. *IEEE Transactions on Visualization and Computer Graphics*, 17(12), pp.2301-2309. Available at: https://ulwazi.org/D3_Data-Driven_Documents.pdf (Accessed: 2 September 2024).

Data stories website (n.d.). *Pudding*. Available at: https://pudding.cool/ (Accessed: 2 September 2024).

Information is Beautiful Awards (n.d.). Available at: https://www.informationisbeautifulawards.com/showcase?type=awards (Accessed: 2 September 2024).

Ostini, G. (n.d.). How data journalists create beautiful feature stories. *Shorthand*. Available at: https://shorthand.com/the-craft/how-data-journalists-create-beautiful-feature-stories/index.html (Accessed: 2 September 2024).